

November 09, 2015

TO: Members of the MAG Transportation Safety Committee

FROM: Renate Ehm, City of Mesa, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Tuesday, November 17, 2015 - 10:00 a.m.
MAG Office Building, 2nd Floor, Cholla Room
302 North First Avenue, Phoenix

A meeting of the MAG Transportation Safety Committee will be held at the time and place noted above. Committee members or their proxies may attend **in person, via videoconference or by telephone conference call**. Those attending by video conference must notify the MAG site three business days prior to the meeting. Those attending by telephone conference call please contact MAG offices for conference call instructions.

Please park in the garage under the MAG building, bring your ticket, parking will be validated. For those using transit, Valley Metro/RPTA will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the Transportation Safety Committee does not meet the quorum requirement, members who have arrived at the meeting will be instructed a legal meeting cannot occur and subsequently be dismissed. Your attendance at the meeting is strongly encouraged.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Jason Stephens at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

If you have any questions regarding the meeting, please contact Sarath Joshua at (602) 254-6300.

TENTATIVE AGENDA

COMMITTEE ACTION REQUESTED

1. Call To Order

For the November 17, 2015 meeting, the quorum requirement is 10 committee members.

2. Approval of September 22, 2015 Meeting Minutes

3. Call to Audience

An opportunity will be provided to members of the public to address the Transportation Safety Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless members request an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

4. Program Managers Report

The following items will be addressed:

- Road Safety Assessment Program
- Avondale's Strategic Transportation Safety Plan
- Chair and Vice Chair
- 2016 UPWP Project Ideas
- RTSIMS Update
- 2016 Meeting Dates (Attachment One)

5. FY 2017 TAP SRTS Projects

In response to the call for Transportation Alternatives/Safe Routes to School (TA/SRTS) project applications for FY 2017, a total of six (6) project applications were received requesting a total of \$260,407. Funds available for programming is a total of \$508,057 in FY2017. Project applications were made

2. Review and approve the minutes of the meeting held on September 22, 2015.

3. For information.

4. For information and discussion.

5. For information, discussion, and possible action to recommend the list of six (6) projects in the FY 2017 Transportation Alternatives Non-infrastructure Safe Routes to School program.

available, via the MAG website, for the committee to download and review. **The committee will discuss the merits of each proposed project and recommend a list of TA/SRTS projects for FY 2017.** Please note that there will be presentations to the committee on individual projects. In addition, questions posed to applicants by evaluators will be addressed during the presentations.

The complete list of SRTS projects is included as Attachment Two. Since all available funds will not be programmed for TAP/SRTS projects, the remaining \$247,650 will be utilized to program TAP Infrastructure Projects in FY 2018-2020.

6. STSP Implementation Plan Prioritization

The Strategic Transportation Safety Plan (STSP) was formally approved by Regional Council on October 28, 2015. The implementation of the STSP will be overseen by the Transportation Safety Committee. MAG staff will provide a brief overview of the Implementation portion of the STSP. The committee will discuss a strategy to prioritize programs and projects included in the Plan. The Implementation Plan and Matrix from the STSP are provided as Attachment Three.

7. Reports by Committee Members on Transportation Safety Activities

Members will be requested to report agency activities or current issues that are related to transportation safety.

8. Requests for Future Agenda Items

Members will be provided the opportunity to suggest future agenda topics.

9. Next Meetings

The next committee meeting is scheduled for 10 a.m. on Tuesday, January 26, 2016 in the MAG Ironwood Room.

10. Adjournment

6. For information and discussion.

7. For information and discussion.

8. For information and discussion.

9. For information and discussion.

DRAFT MINUTES OF
MARICOPA ASSOCIATION OF GOVERNMENTS
TRANSPORTATION SAFETY COMMITTEE MEETING

September 22, 2015
Maricopa Association of Governments
Ironwood Room, Suite 200
302 N. 1st Ave,
Phoenix, AZ 85003

MEMBERS ATTENDING

- | | |
|---------------------------------------|---|
| * Cristy Robinson, AAA Arizona | # Hugh Bigalk, City of Goodyear |
| Tom Burch, AARP | Mike Gillespie for Woodrow Scoutten, |
| * Kohinoor Kar, ADOT | Litchfield Park |
| Shane Kiesow, City of Apache Junction | Mazen Muradvich for Nicolaas Swart, |
| * Robert Gray, ASU | Maricopa County |
| * Paul Lopez, City of Avondale | Renate Ehm (Chair), City of Mesa |
| * Vacant, City of Buckeye | * Jeremy Knapp, Town of Paradise Valley |
| Dana Alvidrez for Martin Johnson, | # Mannar Tamirisa for Jamal Rahimi, |
| City of Chandler | City of Peoria |
| * Vacant, City of El Mirage | Kerry Wilcoxon, City of Phoenix |
| Kelly LaRosa, FHWA | # George Williams, City of Scottsdale |
| Leslie Bubke for Erik Guderian, | Dana Owsiany, City of Surprise |
| Town of Gilbert | Julian Dresang, City of Tempe |
| Kiran Guntupalli, City of Glendale | # Sam Diggins for Adrian Ruiz, RPTA |
| * Alberto Gutier, GOHS | |

OTHERS PRESENT

Mike Sabatini, Michael Baker
Doug McCants, Harrocks
Natalie Carrick, Michael Baker
Daina Mann, Michael Baker
Sherry Ryan, Chen-Ryan Associates
Alice Chen, MAG
Sarath Joshua, MAG
Margaret Boone, MAG
Eric Nava, MAG
Micah Henry, MAG
Steve Tate, MAG

Martin Lucero, City of Surprise
Stephen Chang, City of Surprise
Andrew Kwasniack, Tatum Group
Eric Boyles, ADOT LPA
Anita Johari, ASJ
Aaron Williams, FHWA
#Tracey Feijt, TSSG, Banner Childrens
Mike Blankenship, AMEC
Mike Kuzel, 4M-Safety

- * Not present or represented by proxy
- # Participated by teleconference
- + Participated by videoconference

1. Call to Order

Chair Renate Ehm called the meeting to order at 9:30 a.m.

2. Approval of July 21, 2015 Meeting Minutes

Chair Renate Ehm called for a motion to approve the July 21, 2015 meeting minutes. Shane Kiesow made a motion to approve, Kerry Wilcoxon seconded and the motion passed unanimously.

3. Call to Audience

Chair Renate Ehm made a call to the audience providing an opportunity to members of the public to address the Transportation Safety Committee. None requested.

4. Program Manager's Report

Chair Renate Ehm requested Sarath Joshua to report on the items included in the Program Manager's Report.

- Road Safety Assessment Program: Sarath Joshua reported that MAG is in the process of starting the next round of road safety assessments and project assessments. There are a total of seven RSAs and two PAs. Field reviews for RSAs are due to begin in the next week and kick-off meetings for the PAs have already been held with anticipation of completion of all RSA and PAs before the end of 2015.
- City of Avondale's Strategic Transportation Safety Plan: This project was requested by the City of Avondale and is being administered by MAG through the on-call contracts at the request of ADOT. Mr. Joshua asked Margaret Boone to provide the Committee a status on this project. Margaret Boone reported that a kick-off meeting was held in August with the City of Avondale and the consultant team led by Michael Baker. The Consultant is in the process of analyzing the crash data for this Avondale project for the period of 2010 through 2014. Ms. Boone introduced Paul Lopez as the new project manager for Avondale as the previous project manager has left the City to continue her career with the City of Chandler. Ms. Boone continued to outline the 12-month project schedule toward the goal of approval of the Plan by Avondale Council in August of 2016. Paul Lopez noted that the City of Avondale is in the process of filling their traffic engineer position and that he will act as the project manager for the Avondale STSP in the interim.
- Approved Road Safety (HSIP) projects in FY2016 through FY2018: Sarath Joshua reported that the list of projects recommended by the Committee has been forwarded to ADOT which will include the Glendale Flashing Yellow Arrow project and the Tempe spot improvement project at Southern Avenue and Rural Road, the Glendale application for Emergency Vehicle Pre-emption was deemed ineligible during the ADOT review process. Mr. Joshua noted that the Tempe project went through the process from an RSA to a PA and then to a successful HSIP application. There will be further discussion with the Committee in the future to come up with a strategy for nominating road safety projects in the region to fit within the updated HSIP guidance provided by ADOT.
- Approved Safe Routes to School (TA) projects in FY2016 and FY2017: Sarath Joshua reported that six projects are now going through the TIP programming process as recommended by the Committee. Mr. Joshua notes that there were funds left available in FY2016, and therefore a second call for FY2017 SRTS projects was

included in the recent TIP call for projects. This recent call for project applications resulted in five project applications being submitted in the amount of \$190 thousand dollars. Margaret Boone stated that the Committee will be notified by e-mail when the applications are available for download on the MAG modal TIP application webpage. The e-mail will include a link to the TIP webpage noting that it is different than the SRTS webpage where the applications have been made available in the past. In addition, an e-mail was sent out this morning which included the evaluation sheets to be used by Committee members. A schedule for the evaluation process was provided to the Committee; evaluation scores are requested to be forwarded to MAG by October 22nd, questions included in the evaluation sheets will be forwarded the applicants that same day, local agency applicants will have an opportunity to present their projects to the Committee for discussion and to facilitate generating final evaluation scores by Committee members at the November 17th meeting to be held at 10:00 a.m. Sarath Joshua noted that the schedule outlined by Margaret was provided to initiate participation by Committee members for evaluation of the five projects in order to generate a recommendation of the list of projects at the November 17th meeting.

- Nominations for Chair and Vice Chair: Sarath Joshua stated that with the vacancy at the Vice Chair position left by Dana Alvidrez going to the City of Chandler, and Chair Renate Ehm's term as Chair ending in January 2016, nominations are being requested for both the Chair and Vice Chair positions. Nominations should be sent to MAG addressed to the MAG Regional Council Executive Chair, Mayor Jim Lane, by October 2nd. This deadline is provided in order to get the nominations on the next Regional Council Executive Committee agenda in mid-October for approval.
- FHWA Systemic Safety Implementation Peer Exchange: Sarath Joshua invited Kelly LaRosa to report on this item. Kelly LaRosa from FHWA stated that the Peer Exchange is part of the Federal Highways Every Day Counts initiative and will focus on systemic safety improvement identification and implementation. Ms. LaRosa stated that there is a contingent of about five people from nine states attending, including Arizona. In addition, there will be a training event provided by ADOT in early 2016 for local agencies. This training will specifically address developing systemic improvement applications.

5. Strategic Transportation Safety Plan 2016-2025

Chair Renate Ehm requested that Sarath Joshua provide an update on this item. Sarath Joshua stated this project started in 2013 and that MAG is now in the final stages toward approval of the Plan. Changes have been made to the implementation portion of the plan and prepared for the Committee for discussion at today's meeting. Margaret Boone outlined the changes to the implementation plan due to the newly released 2015 ADOT HSIP approval process. Ms. Boone first recognized the Committee as well as the members of the extended TSSG for their participation in this process. Ms. Boone then referred Committee members to the handout provided of the revised implementation plan portion of the STSP draft final document. The text now indicates that the implementation plan will include working with ADOT to fully understand the new guidance as well as working within that with regard to how the implementation plan can be funded. The plan will now state the known funding as "through FY2018" as this will be the last year there will be an HSIP sub-allocation to the MAG region. The proposed final document also includes the direction from the Regional Council for MAG to work cooperatively with

ADOT to achieve the crash reduction targets. Ms. Boone went on to describe the added wording which includes a proposed strategy for the region to come up with a list of good projects that will be eligible under the new ADOT HSIP guidance in order for the appropriate amount of HSIP dollars to be spent where the majority of the crashes occur in the MAG region. Sarath Joshua noted that when implementing a data driven process, it is estimated that about 50 percent of the state's annual HSIP allocation, or \$21M, would need to be allocated to qualifying road safety projects in the MAG region. This assumes that, for each fiscal year, MAG recommends a sufficient number of successful projects, about 42 applications at an average project cost of \$500,000. This is just an estimation to show what would be necessary. The generation of HSIP project applications may be challenging for some member agencies, despite having sites with road fatalities and serious injuries. Mr. Joshua suggested, consistent with the revised implementation portion of the Plan, that it may be necessary to establish a new MAG program that would provide assistance to local agencies in preparing successful project applications through on-call consultants. A recommendation by the Committee with this revised language would provide the opportunity to get funding into the MAG work program to identify projects based on a data driven region wide screening process, work with local agencies and generate HSIP applications. Shane Kiesow inquired as to if the MAG on-call consultants would be utilized for the work to generate projects or if it would be done by MAG staff. Mr. Joshua stated that the on-call consultants would definitely be utilized but that since MAG has access to the ALISS crash data, that MAG staff could provide the resources for crash data for some of the local agencies that may not have this resource. Kelly LaRosa asked if ADOT has had the chance to review the Implementation Plan and what if any feedback was received from them. Mr. Joshua answered that ADOT has not provided any feedback and it was anticipated that this feedback would be provided at this meeting along with that of the rest of the Committee. However, there are no inconsistencies between the State SHSP and HSIP guidance and the revisions to the Implementation Plan, only the MAG approach to working within that guidance. Mr. Joshua stated that the new HSIP guidance seems to be a fair process with the assumption that there would be a statistically sufficient number of applications generated to address safety issues in the MAG region. Kiran Guntupalli stated that, as a local agency having recently submitted applications for HSIP, he feels that it is a good solution for MAG to provide this assistance in identifying projects and generating applications. Leslie Bubke asked if this strategy addresses the funding shortfall or the sub-allocation of HSIP funding to the MAG region. Mr. Joshua stated that the strategy would fully address the regions needs if MAG can receive an amount of funding equal to the high crash risk locations. Kiran Guntupalli stated a concern that historically, ADOT has not provided a formal process for submitting project applications and that once a list of projects has been sent to ADOT, some projects have then been omitted. Sarath noted that with the new guidance, and based on discussions with the ADOT Traffic Safety section, ADOT has stated that they will have an annual call for projects. Margaret Boone added that the new guidance outlines a process by which all applications have to go through the COG or MPO and that based on discussions with ADOT, this will most likely still stand as the process moving forward. Mr. Joshua noted that the intent of this strategy is to refine the MAG process and to send ADOT only highly qualified projects from the MAG region. Kerry Wilcoxon asked if MAG can take a snapshot view of where hotspots are to get an idea if there are 42 projects out there. Mr. Joshua stated that this is a very valid point and that there will have to be a very careful network screening. This will be a task for the Committee in upcoming months to discuss

what that process should be. Andrew Kwasniak requested, and was provided the opportunity to address the Committee on this agenda item. Mr. Kwasniak stated that he believes there needs to be advanced techniques used for this screening and emphasized that there may be a number of issues that can be identified outside of just looking at locations where there are fatal and incapacitating injury crashes. Mr. Kwasniak asked if MAG had identified these advanced screening techniques. Mr. Joshua stated that MAG, through this Committee has adopted the NSM-I which was recently updated during the STSP process. The equation in the RTSIMS software was revised in order address the new weighting system, but that there still needs to be a lot of work by MAG and the Committee to identify and refine a screening process for this effort. Kiran Guntupalli added that HSIP dollars can only be used to address fatal and serious injury crashes and that the MAG region should also come up with a strategy to address the education and enforcement elements not traditionally eligible for this funding source. Julian Dresang stated that in order to pursue HSIP funding that there needs to be a better process for identifying locations that will be eligible, noting that just because an location is ranked high based on the number of fatal and incapacitating injury crashes, does not necessarily mean that it will compete well for HSIP. Mr. Joshua agreed and stated that the screening method needs to be consistent with this goal. Kiran Guntupalli noted that the MAG NSM-I is weighted heavier for crash severity and also collision manners that result in the more severe injury crashes. Chair Renate Ehm stated that the overall discussion seems to indicate that the Committee is in alignment with the revisions made to the Implementation Plan for the approach spending of safety funding and requested a motion to **recommend the approval of the MAG STSP with the revisions to the Implementation Plan as noted by Sarath Joshua**. Kerry Wilcoxon made a motion, Shane Kiesow seconded, and the recommendation passed unanimously.

6. Multi-modal Level of Service Study (MMLOS)

Chair Renate Ehm introduced this item for information and discussion on the MAG Multi-Modal Level of Service (MMLOS) study and noted the upcoming workshop to be held on October 13th. Sarath Joshua invited Alice Chen of MAG to present this item. Ms. Chen introduced herself and began by providing an overview of the study goal to introduce a concept widely used throughout the country for level of service to include bicyclists, pedestrians and transit with safety as an overarching theme. Ms. Chen introduced Sherry Ryan from Chen/Ryan Associates to present the status of the study. Sherry Ryan noted that the MMLOS study measured how street design and operations met the needs of all modes of travel and that, where the non-vehicle modes are concerned, is really more of a measure of the users quality of experience as opposed to a measure of capacity. Another goal of the study and the toolkit is to provide local agencies with the analysis tools to implement MMLOS at the planning level. Ms. Ryan provided examples of how other areas of the country have benefited economically from investments in improving multimodal level of service; one community has seen an increase in merchant sales, increases in residents shopping locally, and that on average, two out of three merchants attribute improved business to an increased level of walking and biking in the area. The study is mindful of the challenges; balancing the needs of multiple modes in limited space, that aggressive improvements can be costly, and that there may be some resistance from local business owners or residents. Detail was provided on the identification of multimodal focus pilot sites with a flowchart outlining corridors with high active transportation propensity, high quality existing/planned multimodal network features

(canals & LRT alignments), corridors identified in currently adopted local planning documents, and how member agency input would contribute to the pilot MMLOS analysis sites. Ms. Ryan invited Committee members to attend the workshop to be held at MAG on October 13th. Sarath Joshua noted that the analysis requires a lot of data collection that is a large task for some local agencies and inquired as to how other agencies have done this with the lack of resources available. Ms. Ryan stated that the analysis is more applicable to a corridor as opposed to a community wide network and that agencies have found it easier to collect the data for the concentrated corridors. Kerry Wilcoxon asked when the analysis would be complete. Alice Chen stated that it would be completed in the February-March (2016) timeframe. Renate Ehm thanked Alice and Sherry for their presentation and stated that she is looking forward to attending the October workshop.

7. Corridor Safety Plan Pilot Project

Chair Renate Ehm introduced this item noting that the committee had previously received notification of how to download the Corridor Safety draft plan for review. Sarath Joshua requested that the project manager, Margaret Boone, introduce this item. Margaret Boone stated that this project was identified in the MAG work program for a corridor safety pilot project, and that the Committee recommended the corridor of Indian School Road from 51st Avenue to 75th Avenue. Ms. Boone introduced Natalie Carrick from the consultant team led by Michael Baker to provide the Committee an overview of the draft report and its findings. Natalie Carrick outlined the project goals; prepare an improvement plan that prioritizes and categorizes safety issues with recommended safety improvements and as a pilot project, serve as a template for other agencies in developing similar projects. Ms. Carrick continued that from the Corridor Safety Assessment (CSA) team's perspective the length of the corridor is one of the more important things to keep in mind when selecting the corridor in that it is important to select a corridor that is not too long. The task of identifying the CSA team early is important to ensure the members have time to review data and coordinate schedules so that all team members are able to attend. Having the City of Phoenix staff provide the required project information in such a timely fashion was a huge benefit to the project. The locations to obtain traffic counts including, bikes and pedestrians, were identified and discussed with the City of Phoenix as well as the pros and cons of collecting traffic counts during special events. It was decided that it would be beneficial for this project that traffic volumes be collected during spring training. Success factors in establishing a field review plan early on included a Tuesday/Wednesday field review schedule which worked well having Thursday and Friday to organize and document the observations and Monday to send out all information packet for the next field review. Splitting the corridor field reviews into manageable segments gives the CSA leader the time to compile and document all the information gathered from the field review and prepare for the next week of field reviews. Mike Blankenship from AMEC Foster Wheeler, Mike Kuzel from 4M Safety, and Daina Mann from Gunn Communications, provided the key elements of the findings in developing the corridor safety plan; establishing a dedicated maintenance corridor, identifying improvements that would require local funds, recommendations that would require additional study, improvement recommendations aligned with crash modification factors with 4 and 5 star ratings to be consistent with current HSIP guidance, and identifying educational and enforcement campaigns with associated funding sources. Natalie Carrick opened the item for any discussion by the Committee. Kerry Wilcoxon thanked the CSA team for providing the corridor safety plan and for remaining safe during field reviews. The City

has started to act on some of the recommendations already and appreciates the opportunity to look at a corridor in this manner. Sarath Joshua asked if there is a recommended length of time for the enforcement campaign. Daina Mann stated that the recommendation is to plan for a concentrated 6 month campaign. This would be a pilot project that could be applied on other corridors to include an overlapping of enforcement and education.

8. Reports by Committee Members on Transportation Safety Activities

Chair Renate Ehm requested reports from committee members on transportation safety related activities at local agencies. Kerry Wilcoxon reported that the City of Phoenix is getting ready to release their 2014 collision summary. In addition, the City of Phoenix is finalizing their safety performance function project and would like to bring the item to the Committee for feedback and discussion on how it could be used in the region. Kelly LaRosa reported an update to the Focus Approach to Safety program, and that new to the program is a focus on bicyclist safety. Ms. LaRosa also stated that the City of Mesa has currently been added as a focus City for pedestrians and bicyclists. Kiran Guntupalli reported that a HAWK has been installed at 68th and Bethany Home Road.

9. Request for Future Agenda Items

Chair Renate Ehm requested future agenda items of interest to Committee members. Julian Dresang asked if MAG could look at doing a pilot project for safety performance functions for the region. Sarath noted that a good starting point would be the Phoenix study which could be brought back to the Committee in November ahead of the process for identifying new projects in the MAG work plan.

10. Next Meeting

Chair Renate Ehm stated that the next regular meeting is scheduled for Tuesday, November 17, 2015 at 10:00 a.m. in the Ironwood Room.

11. Adjournment

Chair Renate Ehm adjourned the meeting at 11:29 a.m.

2016 MAG Meeting Schedule
Transportation Safety Committee
MAG Ironwood Room

January 26, 2016	10:00 AM	Transportation Safety Committee
March 22, 2016	10:00 AM	Transportation Safety Committee
May 24, 2016	10:00 AM	Transportation Safety Committee
July 26, 2016	10:00 AM	Transportation Safety Committee
September 27, 2016	10:00 AM	Transportation Safety Committee
November 15, 2016	10:00 AM	Transportation Safety Committee

Unless otherwise noted, bi-monthly meetings will be held on the fourth Tuesday of odd-numbered months.

Attachment Two

TA/SRTS Projects FY 2017

Applicant	Program Year	Project	Requested FY2017 Funds
City of Glendale	FY2017	Glendale Schools: Support Activity Project	\$ 46,459
Maricopa (County)	FY2017	Safe Routes to School - Maricopa County: Support Activity Project	\$ 49,996
City of Phoenix	FY2017	Creighton School District/Biltmore Preparatory: Study Project	\$ 22,000
City of Phoenix	FY2017	Creighton Elementary Safe Routes: Support Activity Project	\$ 21,452
City of Phoenix	FY2017	Vista del Sur Fit, Performing Tigers: Support Activity Project	\$ 20,500
City of Surprise	FY2017	SRTS Walking/Biking Maps for Dysart Schools	\$ 100,000

Request Total **\$ 260,407**

Total Available \$ 508,057

Amount Remaining **\$ 247,650**

2015 STRATEGIC TRANSPORTATION SAFETY PLAN



ZERO DEATHS- INJURIES



October 2015

STRATEGIES

The Implementation Plan Matrix, provided in Table 4 on the following pages, organizes the 2015 MAG STSP Action Areas, strategies, and corresponding lead agencies, planning level unit costs, return on investment, and implementation time frame.

All annual safety programs that resulted from the 2005 MAG STSP will be continued. Most of the new strategies can be considered a promotion or enhancement of strategies identified in the 2005 MAG STSP. Three of the proposed strategies are new:

- 1.1 Implement wrong-way detection systems to reduce wrong-way crashes on freeways.
- 2.1 Support and encourage the implementation of infrastructure-based ITS technologies that show promise for reducing fatalities and serious injuries.
- 2.3 Develop best practice guidelines for use of automated enforcement to improve safety.

INVESTMENT REQUIREMENTS

The need to improve road safety is prominently identified in the MAP-21 legislation. National performance goals for federal highway

programs were set and the safety goal was at the top of the list:

“Safety – To achieve significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands”

MAG member agencies are able to obtain federal funds dedicated for implementing eligible road safety improvements. These funds are available through ADOT, MAG, and the Governor’s Office of Highway Safety (GOHS), including certain set-asides within the programs below:

- National Highway Performance Program (NHPP)
- Surface Transportation Program (STP)
- Highway Safety Improvement Program (HSIP)
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- MAG Unified Planning Work Program (UPWP)
- Transportation Alternatives Program (TAP)
- Fixing and Accelerating Surface Transportation (FAST)
- NHTSA Funds (164, 402, 405 and 410 grants) (GOHS)

Additionally, local agency funds may be a funding resource for plan implementation.

The 2035 MAG Regional Transportation Plan (January 2014) identifies the first of four goals as “System Preservation and Safety: Transportation infrastructure that is properly maintained and safe, preserving past investments for the future”. Promoting and ensuring transportation safety will require resources commensurate with the importance of safety to the region’s values.

Securing adequate resources to implement this plan will be a challenge. In some cases, current programs will be enhanced and existing resources are already identified. Other strategies will require new funds.

TIME FRAME

Implementation of this plan spans a 10-year time frame from MAG fiscal year 2016 to MAG fiscal year 2025 (July 2015 – June 2025). Implementing the strategies outlined in this STSP provides the greatest opportunity of achieving the goal of reducing fatalities and serious injuries by three percent to seven percent in the next five (5) years from the base year of 2013.

IMPLEMENTATION COST

Planning level cost estimates were developed for each strategy based on prior experience and local agency/expert input. The following resources were used to estimate costs when local information was not available:

- 2009 FHWA Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections
- 2013 FHWA Costs for Pedestrian and Bicyclist Infrastructure Improvements
- BIKESAFE: Bicycle Safety Guide and Countermeasure Selection System
- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System

Costs for DUI Enforcement and Pedestrian and Bicycle Crossing Enforcement were estimated by taking the amount of NHTSA funds awarded to MAG member agencies as a low from the years 2013 through 2015. This information was obtained from the GOHS annual reports from 2013 and 2014 and provided by GOHS staff for FFY 2015.

The planning level unit costs were projected to a 10-year total cost of \$78,040,000 to implement this plan. The summary of assumptions used to arrive at this total cost is provided in Appendix B: Implementation Plan Cost Estimate Assumptions. The resulting annual average cost of implementation is \$7,804,000.

The projected funding resources based on those currently available through FY 2018 for implementation of this Plan totaled about \$4,770,000 (see Table 3), which results in a remaining need of \$3,025,250, annually. This funding shortfall is depicted in Figure 27, and was also highlighted in presentations to MAG decision makers.

Table 3 – Estimated Funding Resources for Plan Implementation

Funding Resources	FY15-18
MAG UPWP	\$584,000
HSIP Sub-Allocation	\$1,900,000
TA Non-Infrastructure Allocation	\$400,000
TA Infrastructure Allocation (portion)	\$320,000
GOHS	\$1,566,000
TOTAL	\$4,770,000

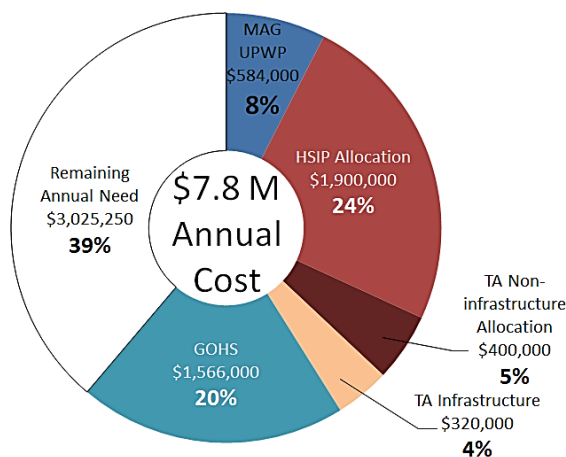


Figure 27 – Annual Cost of Implementation vs. Current Funding Resources (\$7.8M Annually) through FY2018

MAG GUIDANCE FOR FUNDING PLAN IMPLEMENTATION

The MAG Regional Council and MAG Transportation Policy Committee provided guidance to MAG staff regarding funding the \$3 million Implementation Plan shortfall. The direction given to MAG staff, by Regional Council action, was 1) to have discussions with ADOT to explore the possibility of increasing the safety funding suballocation to the MAG region by at least an additional \$3 million

annually to help implement the strategies identified in the MAG Strategic Transportation Safety Plan, and 2) to work cooperatively with ADOT in demonstrating how increasing the MAG allocation would assist ADOT in meeting the statewide road safety targets and performance measure as required in MAP-21.

2015 HSIP MANUAL & NEW GUIDANCE ON FEDERAL ROAD SAFETY FUNDS

Shortly after the MAG guidance was provided to address fund needed to implement the Plan, the Arizona DOT released the new 2015 HSIP manual which outlined a new HSIP programming process and the planned transition to a statewide program in FY 2019. The new HSIP process and related guidance states that all future programming of federal HSIP funds for road safety projects will be based on new project eligibility criteria designed to approve ONLY the funding of safety improvement projects that: 1) include countermeasures that would reduce fatal and serious injury crash occurrence, 2) demonstrate a benefit cost ratio (B/C) of 1.5 or greater, with the B/C ratio calculated using Crash Modification Factors with at least a four-star rating, and 3) have a minimum total project cost of \$250,000.

The programming of HSIP funds for safety projects through FY2018 will continue under the new project eligibility rules. The new HSIP process that will begin in FY2019 will terminate the suballocation of HSIP funds to MAG (and all MPOs and COGs). Starting in FY2019 all

candidate road safety projects will be evaluated and recommended to the Arizona DOT by MAG for multiple program years. All projects would compete for the statewide HSIP allocation of approximately \$42 million in each fiscal year.

Based on the crash history of the MAG planning area (in comparison to the entire state) and the execution of the new HSIP process, it is estimated that about 50 percent of the state's annual HSIP allocation, or \$21M, would need to be allocated to qualifying road safety projects in the MAG region. This anticipated outcome starting in FY2019, if realized, would fully address the funding needs for road safety improvements in the MAG planning area.

However, this assumes that, for each fiscal year, MAG recommends a sufficient number of excellent candidate road safety improvement projects for locations that have experienced fatal and serious injury crashes. To obtain \$21M in HSIP funds, a total of 42 successful project applications would be required, at an average project cost of \$500,000. The generation of HSIP project applications to meet the new HSIP criteria is a rather complex task that some smaller member agencies may find challenging, despite having sites with road fatalities and serious injuries. Assuming that the HSIP process remains unchanged, to ensure that the MAG region is able to compete successfully for HSIP, it may be necessary to establish a new MAG program that would provide assistance to local agencies in preparing successful project applications through on-call consultants.

RETURN ON INVESTMENT

The MAG Transportation Safety Committee provided subjective input on the potential of each strategy to provide a low, medium, or high return on investment for the region. Projecting the cost for strategies that are indicated to provide a high rate of return on investment resulted in a total estimated cost requirement of nearly \$68 million dollars, which is 87 percent of the estimated total cost of Plan implementation. Implementation costs in relation to return on investment over the 10-year implementation time frame is illustrated in Figure 28.

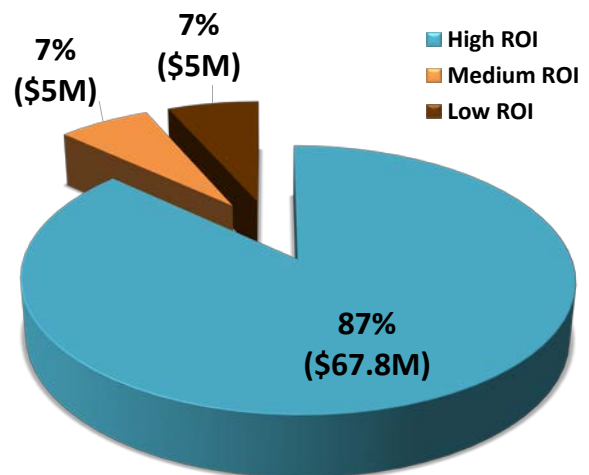


Figure 28 – Implementation Cost vs. Return on Investment over 10 years (\$78M Total)

MONITORING THE EFFECTIVENESS OF REGIONAL ROAD SAFETY PROGRAMS AND INITIATIVES

MAG will produce an annual Transportation Safety Performance Report that includes: (1) Crash Statistics and Trends; (2) Performance in Comparison to the Safety Target; and (3) Summary of Road Safety Projects & Activities in

each Action Area including their possible impact on road safety performance. This annual report will also include a comparison to highlight how the MAG regions safety improvement projects, programmed utilizing HSIP funding through FY 2018 and beyond, are effecting ADOT's ability to meet the road safety targets and performance measures requirements established in MAP-21. The MAG Transportation Safety Committee will continue to provide oversight to programs and projects and will guide these activities throughout the implementation time frame. Regular review of projects and programs that address these strategies will be done under the direction and recommendation of the MAG Transportation Safety Committee. Revisions or enhancements to the programs and projects, including further coordination with ADOT on the process of programming of HSIP funds, can be made throughout implementation as they relate to safety performance toward the target. This STSP will be updated on a five-year cycle.

Table 4 – 2015 MAG STSP Implementation Plan Matrix

Strategies		Lead Agency	Unit Cost (1000's)	Unit	Return on Investment (Subjective)	Time Frame (Short, Medium, Long)	10-yr Total Cost (\$1000)
3.13	Perform comprehensive review of current EVP practices and develop a recommended practice for the region to follow.	MAG Work Program currently underway					
2.1	Support and encourage the implementation of infrastructure-based ITS technologies that show promise for reducing fatalities and serious injuries.	MAG ADOT	\$	na	High	Short	\$ 0
3.1	Encourage submittal of TIP projects that include safety elements, for improving safer access for all modes, by including safety as an explicit project evaluation criteria for all TIP projects that currently have evaluation criteria as a means of prioritizing a list of projects. Exceptions to this practice are those Transit Maintenance and Operations programs funded through the MAG TIP.	MAG	\$	na	High	Short	\$ 0
3.2	Identify new practices or standards that integrate safety into planning and design.	MAG ADOT Local Agencies	\$	na	High	Short	\$ 0
3.4	Prioritize Improvements based on screening for high crash risk intersections.	Local Agencies MAG ADOT	\$	na	High	Short	\$ 0
4.1	See Strategy 3.1 - Also to be applied under Action Area 4.0: Eliminate Death and Injury Involving Vulnerable Road Users (Bicyclists, Pedestrians, Persons with Disabilities) as Strategy 4.1.	MAG Local Agencies	\$	na	High	Short	\$ 0

Table 4 – 2015 MAG STSP Implementation Plan Matrix

Strategies		Lead Agency	Unit Cost (1000's)	Unit	Return on Investment (Subjective)	Time Frame (Short, Medium, Long)	10-yr Total Cost (\$1000)
4.14	Share best practices among regional stakeholders on best safety practices for getting to and from school; including developing recommended walk or bike to school routes for all schools in the region and administration of SRTS programs.	ADOT MAG School Districts Local Agencies	\$	na	High	Short	\$ 0
4.4	Identify high risk locations for potential implementation of enhanced pedestrian crossings that would have a favorable benefit/cost ratio.	MAG	\$ 0	na	High	Short	\$ 0
4.15	Support a regional training program for school crossing guards.	MAG	\$	per year for 3 annual training workshops	High	Short	\$ 40
3.9	Conduct targeted enforcement of high crash risk intersections.	Local Agencies ADOT	\$ 18	ea intersection	High	Short	\$ 8,910
5.2	Explore methods of educating young road users through Mass-media campaigns.	ADOT GOHS Local Agencies AAA MAG	\$ 30	ea	High	Short	\$ 30
3.5	Implement systemic improvements based on identifying characteristics of high risk intersections.	Local Agencies	\$ 46	ea intersection	High	Short	\$ 22,770
4.13	Develop on-going training and public information bicycle and pedestrian safety campaigns.	GOHS MAG Local Agencies	\$ 60	ea	High	Short	\$ 60

Table 4 – 2015 MAG STSP Implementation Plan Matrix

Strategies		Lead Agency	Unit Cost (1000's)	Unit	Return on Investment (Subjective)	Time Frame (Short, Medium, Long)	10-yr Total Cost (\$1000)
4.6	Install medians and pedestrian crossing islands.	Local Agencies	\$ 75	ea crossing	High	Short	\$ 1,500
6.2	Enhance the Regional Transportation Safety Information Management System	MAG	\$ 80	ea	High	Short	\$ 80
3.3	Enhance the MAG RSA Program:						
3.3.2	Conduct safety assessment reviews during the design phase.	MAG Local Agencies	\$ 80	per annual program administered	High	Short	\$ 800
4.5	Install pedestrian Hybrid Beacons (HAWKs).	Local Agencies	\$ 85	ea	High	Short	\$ 1,700
1.2	Conduct high visibility DUI saturation patrols.	Local Agencies GOHS	\$ 114	per year	High	Short	\$ 1,140
2.5	Conduct enforcement in all work zones and increase enforcement in school zones.	Local Agencies	\$ 180	per year	High	Short	\$ 1,800
3.3	Enhance the MAG RSA Program:						
3.3.1	Refine RSA location nominating criteria: Priority (1) High crash risk locations Priority (2) Locations where there are known high volumes of bicylists and pedestrians accessing transit.	MAG	\$ 300	per annual program administered	High	Short	\$ 3,000
4.3	Promote and administer Safe Routes to School framework studies to identify school traffic issues and produce walking and biking route maps through the MAG TA non-infrastructure program.	MAG Local Agencies	\$ 400	na	High	Short	\$ 4,000

Table 4 – 2015 MAG STSP Implementation Plan Matrix

Strategies		Lead Agency	Unit Cost (1000's)	Unit	Return on Investment (Subjective)	Time Frame (Short, Medium, Long)	10-yr Total Cost (\$1000)
3.11	Partner with local professional societies to hold an annual workshop to educate roadway designers on safety tools available to assess and improve substantive safety.	FHWA ADOT MAG	\$	na	Medium	Short	\$ 0
6.1	Enhance the existing network screening methodology for intersections and segments.	MAG	\$	na	Medium	Short	\$ 0
4.7	Provide bicycle detection at signalized intersections.	Local Agencies	\$	ea intersection approach	Medium	Short	\$ 88
2.2	Administer projects that develop ICM strategies for handling incident diversions from freeways onto City arterials to address secondary crashes.	MAG ADOT DPS Local Agencies	\$ 180	ICM project/year	Medium	Short	\$ 1,800
4.2	Promote practices that ensure safety and multimodal connectivity in planning and design.	Local Agencies MAG ADOT	\$	na	Low	Short	\$ 0
4.12	Produce a white paper on wrong way bicycle crashes and model ordinances to prevent crashes.	MAG	\$ 10	ea	Low	Short	\$10
3.3	Enhance the MAG RSA Program:						
3.3.3	Identify best practices for promoting or implementing Safe Driving pledge campaigns.	MAG	\$ 30	ea	Low	Short	\$ 30
4.11	Develop a Bicyclist Safety Assessment program that focuses on bicyclist safety countermeasures on bike paths.	MAG	\$ 100	per annual program administered	Low	Short	\$ 1,000

Table 4 – 2015 MAG STSP Implementation Plan Matrix

Strategies		Lead Agency	Unit Cost (1000's)	Unit	Return on Investment (Subjective)	Time Frame (Short, Medium, Long)	10-yr Total Cost (\$1000)
3.7	Decrease wrong-way riding and traffic control violations by bicyclists.	GOHS Local Agencies	\$ 381	per year	Low	Short	\$ 3,810
5.3	Partner with ADOT, Valley Metro, and other organizations to deploy distracted driver safety awareness campaigns.	ADOT GOHS DOEd AAA MAG	\$ 30	ea	High	Medium	\$ 30
2.4	Utilize automated enforcement where appropriate to address speeding.	Local Agencies	\$ 77	ea location	High	Medium	\$ 3,465
3.10	Utilize automated enforcement at high crash risk intersections where appropriate.	Local Agencies ADOT	\$ 77	ea intersection	High	Medium	\$ 18,480
1.3	Develop materials for educating target groups for impaired driving including mass-media campaigns on DUI dangers and penalties.	MAG ADOT Local Agencies GOHS	\$ 50	ea	Medium	Medium	\$ 500
2.3	Develop best practice guidelines for use of automated enforcement to improve safety.	MAG	\$ 80	ea	Medium	Medium	\$ 80
3.6	Prepare a "best practices" guide for Road Diet and Complete Streets projects that incorporates safety countermeasures in project development.	MAG	\$ 80	ea	Medium	Medium	\$ 80
4.8	Develop Complete Streets Implementation Guidelines that integrate safety analysis and design throughout the planning process.	MAG	\$ 80	ea	Medium	Medium	\$ 80
4.9	Prepare a "best practices" guide for high risk intersections and high exposure bicycle and pedestrian crossing nodes.	MAG	\$ 80	ea	Medium	Medium	\$ 80

Table 4 – 2015 MAG STSP Implementation Plan Matrix

Strategies		Lead Agency	Unit Cost (1000's)	Unit	Return on Investment (Subjective)	Time Frame (Short, Medium, Long)	10-yr Total Cost (\$1000)
1.1	Implement wrong-way detection systems to reduce wrong-way crashes on freeways.	ADOT DPS MAG	\$ 200	per year	Medium	Medium	\$ 2,000
3.12	Prepare a "best practices" guide for design of pedestrian and bicycle accommodations at roundabouts.	MAG	\$ 60	ea	Low	Medium	\$ 60
4.10	Explore and release a smartphone application to educate vulnerable users.	MAG ADOT RPTA ASU	\$ 60	ea	Low	Medium	\$ 60
4.16	Develop and distribute educational materials related to intersection safety.	AAA ADOT AARP GOHS MAG	\$ 60	ea crash type addressed	Low	Medium	\$ 60
5.1	Develop short-range action program oriented to 1) high transit activity stops and 2) new routes that would enhance transit stop safety.	RPTA Local Agencies	\$ 80	ea	Low	Medium	\$ 80
6.4	Develop a tool to conduct benefit-cost analyses and calculate crash reduction factors (CRFs).	MAG	\$ 30	ea	Medium	Long	\$ 30
3.8	Prepare technical resource that summarizes and documents regional and national research on effectiveness of safety countermeasures for all E's.	MAG	\$ 100	ea	Medium	Long	\$ 100
6.3	Develop or purchase a comprehensive safety assessment tool based on HSM methodologies.	MAG	\$ 100	ea	Medium	Long	\$ 100
6.5	Develop local calibration factors for existing national HSM SPFs specific to the MAG planning area.	MAG Local Agencies ADOT	\$ 100	ea	Medium	Long	\$ 100